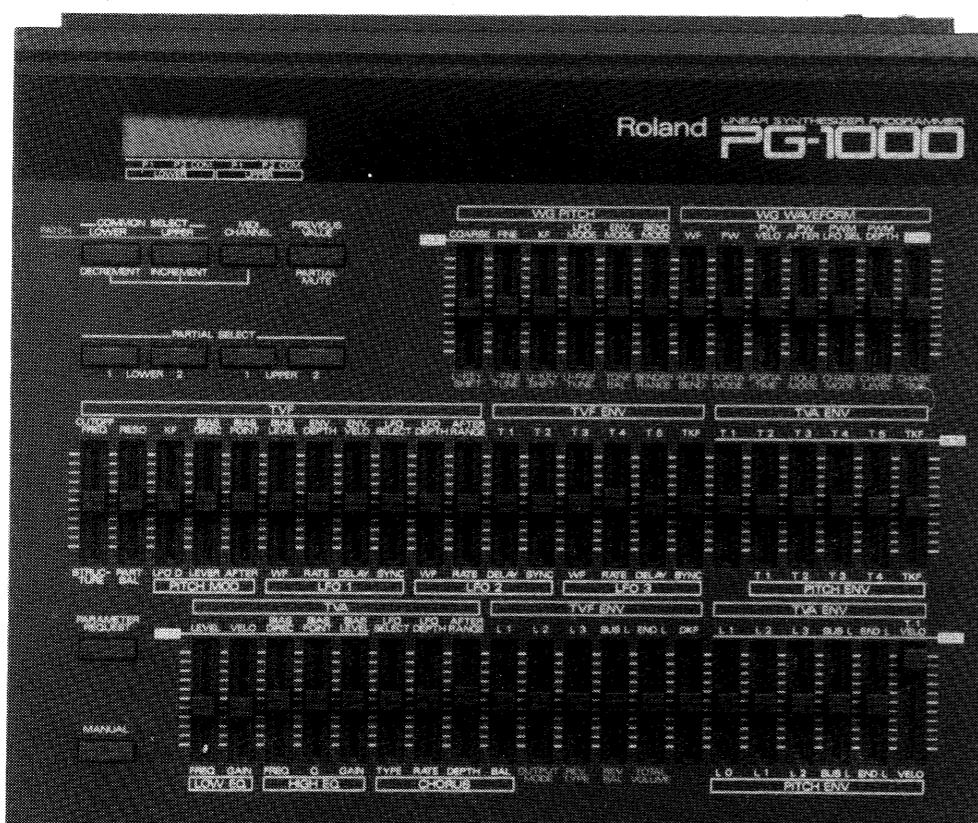
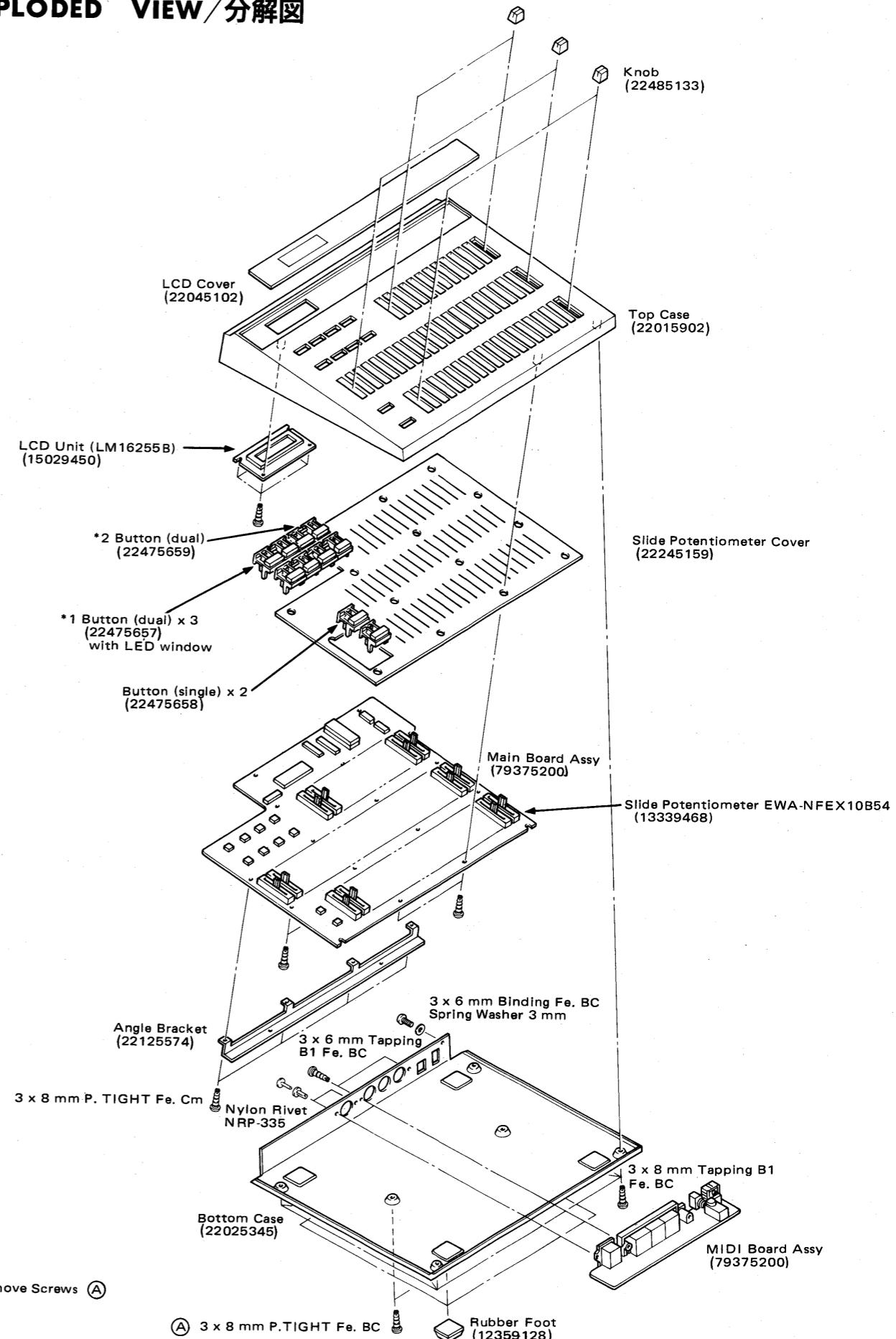


**PG-1000****SERVICE NOTES**

First Edition

**SPECIFICATIONS**

CURRENT CONSUMPTION . . .	150mA DC at 9V
WEIGHT . . . . .	1.6 kg/3 lb 9 oz (without Adaptor)
DIMENSIONS . . . . .	.318(W) x 268(D) x 53(H) mm 12-1/2" x 10-9/16" x 2-1/16"
AC ADAPTER . . . . .	PSA-100 100V PSA-120 117V PSA-220 220V PSA-240 240V Australian

**EXPLODED VIEW / 分解図**

\*1 This type separable into two: replacement single type only.  
このボタンは2つに分割可能。補修品はシングルで供給します。  
Button (single) 22475656

\*2 This type separable into two: replacement single type only.  
このボタンは2つに分割可能。補修品はシングルで供給します。  
Button (single) 22475658

**PARTS LIST****CASING**

22015902	Top Case
22025345	Bottom Case
22045102	LCD Cover
22125574	Angle Bracket
12359128	Rubber Foot
22245465	LCD Dust Cover
22245159	Slide Potentiometer Cover

**BUTTON/KNOB**

22485133	knob	slide potentiometer
22475657	*1 button (dual) with LED window	COMMON SELECT, PARTIAL SELECT

22475658	button (single)	PARAMETER REQUEST, MANUAL
22475659	*2 button (dual)	MIDI SELECT, PREVIOUS VALUE
22499175	button	POWER

*\*This type separable into two: replacement single type only.  
1: button (single) 22475656. 2: button (single) 22475658*

このボタンは2つに分割可能。補修品はシングルで供給します。

**AC ADAPTER**

12449509	PSA-100	100V
12449510	PSA-120	117V
12449511	PSA-220	220V
12449512	PSA-240	240V Australian

**SOCKET**

13429168	MIDI 3-NS (triplet)	MIDI IN/OUT/THRU
13429615	TCS5350-01-1111	DIN socket (PARAMETER IN)
13449706	HCE0470-01-230	AC adaptor jack
13429534	ICE-286-S-TG	EP ROM

**SWITCH**

13129143	SDDW A1	POWER
13169633	SKHHAD039A	

**TRANSFORMER**

12449552	D 32-45	EL inverter
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**LCD UNIT**

15029450	LM16255B with EL, PCB and wirings	
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*No replacement for individual parts.*

ユニット単位で供給。

**PCB ASSEMBLY**

79375200	Main Board (PCB 22925458 1/2)
79375300	MIDI Board (PCB 22925458 2/2)

**POTENTIOMETER**

13339468	EWA-NFEX10B54	50kB all potentiometers
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**INDUCTOR**

12449265	ELE-H102KA	1mH line filter
13529105	DSS 310-55D223S	EMI filter
12449294	BL03RN2-R62T2	

**CRYSTAL**

12389765	TQC-226A-612 12MHz	
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**TRANSISTOR**

15119132	2SA1015GR
15129151	2SC1815GR

**TRANSISTOR ARRAY**

15149114	M54527P
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**RESISTOR ARRAY**

13919312	RMLS 8-153J 15k x 8
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**CAPACITOR ARRAY**

13529115	EXFP8101MW 100P x 8
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**IC**

(main board)		
15179256	μPD78C10G	CPU
15449102	TMM2764D	EP ROM
15179343S0	LC3517 AS 12	S RAM
15159113T0	TC4051BP	8 channel multiplexer/demultiplexer
15159503	TC40H000P	quad 2-input NAND gate
15159510	TC40H074P	dual D-type flip-flops
15159506	TC40H138P	3-8 line decoder/demultiplexer
15169544	TC74H573P	octal transparent latches (with 3 state outputs)
(MIDI board)		
15169304X0	SN74LS04N	hex inverters
15229706	TLP-552	optoisolator
15199135	L78MR05	voltage regulator

**DIODE**

15019152T0	1SS176 TPA-7	
15019281	1SR35-100A T-93	100V 1A rectifier
(LED)		
15029222	SLR55VC3F	

**CONNECTOR**

13439330	IL-S-3P-S2T2-EF
13439297	IL-S-8P-S2T2-EF

**MISCELLANEOUS**

22195889	MIDI holder
22255137	LCD shield paper
12469158	SC-7-BS-T

heat sink

**TEST MODE**

1. Press and hold PARAMETER REQUEST then switch the power on: the instrument will turn on all of the display dots, indicating that it is now in the test mode.
2. Test panel buttons, LCD and LEDs to the table below (in any order).

1. PARAMETER REQUEST を押しながら、電源オン。  
(ディスプレイの全ドットが点灯し、テスト・モードになる。)
2. 各ボタンで、LCD、LED の動作を確認。

Press button	LCD will	How LEDs response
MANUAL	Turn off all dots 全ドット消灯	COMMON SELECT: on , others: off COMMON SELECTの2つの LEDのみ
PARAMETER REQUEST	Turn on all dots 全ドット点灯	PARTIAL SELECT: on PARTIAL SELECTの4つの LED 点灯
MIDI CHANNEL	Unaffected 変化せず	All: on 全 LED 点灯
PREVIOUS VALUE	Unaffected 変化せず	All: off 全 LED 消灯
COMMON SELECT PARTIAL SELECT	Unaffected 変化せず	Only LED associates with pressed button: on 押したボタンの LED のみ点灯

3. Turn the power off.

Conducting the following checking is recommended to make sure that all panel controls are functioning satisfactorily.

4. Turn the power on (normal play mode).
5. Press all PARTIAL SELECT buttons to light mated LEDs.
6. Move all edit knobs in any order and verify the corresponding indications on the display.

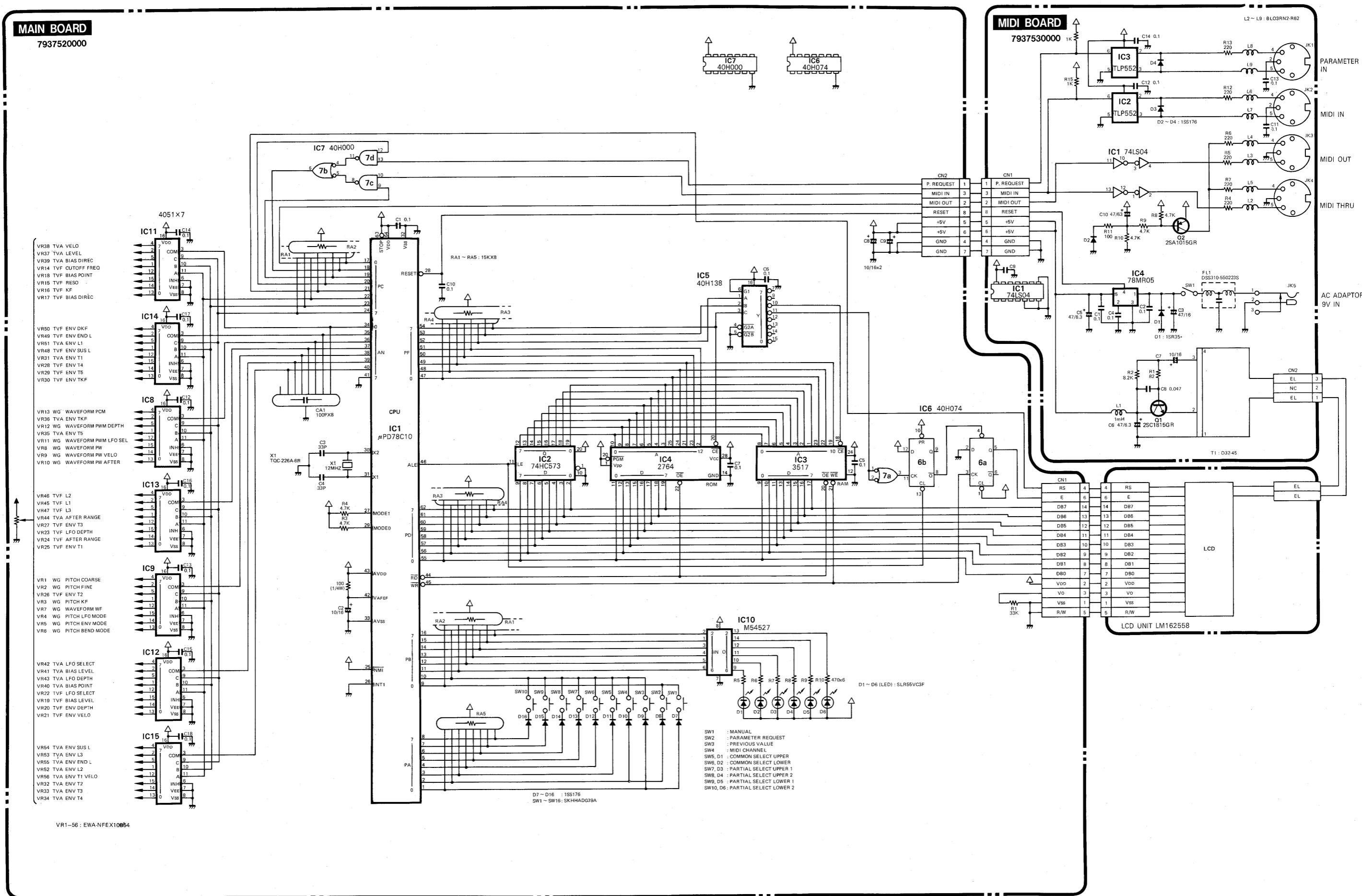
3. 電源オフにする。

各エディット・ツマミのチェックは、通常の操作状態で次のように行なう。

4. 電源オンにする。
5. PARTIAL SELECT のインジケーターをすべて点灯させる。
6. 任意の順に EDIT ツマミを動かすと、EDIT ツマミに対応した画面になると同時に、設定値が変化することを確認。

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

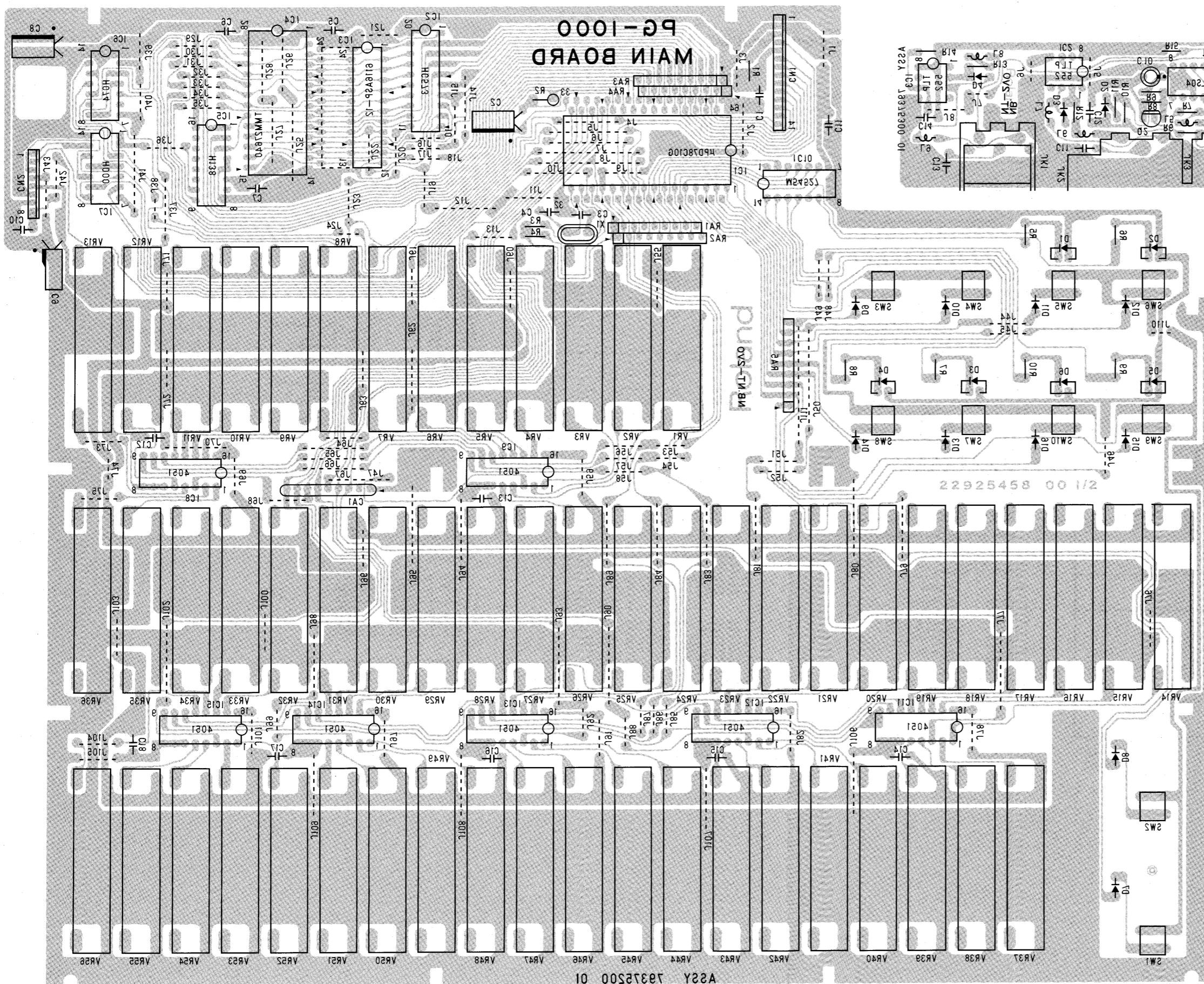
A B C D E F G H I J K L M N O P Q R S T



MAIN BOARD - F0077000 Rev A 00007470-1 (2) | LINEAR BOARD - F0077000 Rev A 00007470-1 (2)

**MAIN BOARD** 79375200 (pcb 22925458 1/2)

**MIDI BOARD** 79375300 (pcb 22925458 1/2)



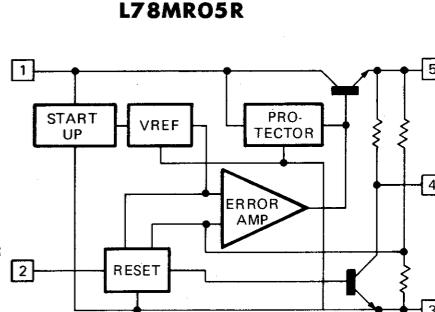
View from foil side

**View from foil side**



PA0	1	64	Vcc
PA1	2	63	Vdd
PA2	3	62	PD7
PA3	4	61	PD6
PA4	5	60	PD5
PA5	6	59	PD4
PA6	7	58	PD3
PA7	8	57	PD2
PB0	9	56	PD1
PB1	10	55	PD0
PB2	11	54	PF7
PB3	12	53	PF6
PB4	13	52	PF5
PB5	14	51	PF4
PB6	15	50	PF3
PB7	16	49	PF2
TxD	17	48	PF1
RxD	18	47	PF0
SCR	19	46	ALE
NT2	20	45	WR
/TO	21	44	RD
5/Cl	22	43	AVcc
CO0	23	42	VAREF
CO1	24	41	AN7
NM1	25	40	AN6
NT1	26	39	AN5
DE1	27	38	AN4
SET	28	37	AN3
DEO	29	36	AN2
X1	30	35	AN1
X2	31	34	ANO
Vss	32	33	AVss

**TOP VIEW**



**PROGRAMMER FOR D-50**  
**MODEL PG-1000**
**MIDI Implementation Chart**
 Date : Feb. 6. 1987  
 Version : 1.00

Function...	Transmitted	Recognized	Remarks
Basic Channel Changed	1 ** 1-16 **	1 ** 1-16 **	
Mode	Default Messages Altered	X * *****	X
Note Number	True Voice	*	X
Velocity	Note ON Note OFF	*	X
After Touch	Key's Ch's	*	X
Pitch Bender	*	X	
Control Change	*	X	
Prog Change	True #	*	X
System Exclusive	○	○	Tone Parameter
System common	Song Pos Song sel True	*	X
System Real Time	Clock Commands	*	X
Aux Message	Local ON/OFF All Notes OFF Active Sense Reset	*	X
Notes	*This unit transmits all received MIDI messages except undefined status of Common message. (F4H, F5H and Reset status) **Used as "Device ID" in Exclusive Messages.		

 Mode 1: OMNI ON, POLY  
 Mode 2: OMNI ON, MONO  
 Mode 3: OMNI OFF, POLY

 Mode 2: OMNI ON, MONO  
 Mode 4: OMNI OFF, MONO

 ○ : Yes  
 X : No

**PPOGRAMMER FOR D-50**  
**MODEL PG-1000**
**MIDI Implementation**
 Date : Feb. 6. 1987  
 Version : 1.00

**1. TRANSMITTED DATA**  
**1.1 Undefined Status ( F4H, F5H ) of Common Messages.**

Transmits all received MIDI messages except for Reset ( FFH )

**1.2 Created message.**

Status Second Third Description

1001 nnnn 0kkk kkkk 0000 0000 Note OFF kkkkkkk = 0 - 127

1011 nnnn 0111 1011 0000 0000 All notes off

1111 0000 --- 1111 0111 System exclusive

1111 1110 Active Sensing

**Notes :**

\*1-1 Transmitted when the Parameter Request button is pushed or when MIDI IN's Non Active condition is detected.

\*1-2 See section 3 ( EXCLUSIVE COMMUNICATION ).

\*1-3 This unit stops transmitting Active Sense message if this unit detects Non Active condition on MIDI IN.

**2. RECOGNIZED RECEIVE DATA**

Status Second Third Description

1111 0000 --- 1111 0111 System exclusive \*2-1

1111 1110 Active Sensing

**Notes :**

\*2-1 See section 3 ( EXCLUSIVE COMMUNICATION ).

**3. EXCLUSIVE COMMUNICATION**

3.1 Request ( One way ) RQI IIIH

( Transmitted only )

**Byte**

 a 111 0000 Exclusive status  
 b 0100 0001 Roland-ID #

c 0000 nnnn Device-ID # = MIDI basic channel, ( 0 - 15 ) where nnnn + 1 = channel #

d 0001 0100 Model-ID # ( D-50 )

e 0001 0001 Command-ID # ( RQI )

f 0aaa aaaa Address MSB

g 0bbb bbbb Address LSB

h 0ccc cccc Address LSB

i 0ddd dddd Size MSB

j 0eee eeee Size LSB

k 0fff ffff Checksum

m 1111 0111 End of System Exclusive ( EOX )

Summed value of the all bytes between Command-ID and EOX must be 0FFH ( 7 bits ). It doesn't include Command-ID and EOX.

3.2 Data set ( One way ) DT1 I2H \*3-2

( Transmitted and Recognized )

**Byte**

a 1111 0000 Exclusive status

b 0100 0001 Roland-ID #

c 0000 nnnn Device-ID # = MIDI basic channel, ( 0 - 15 )

d 0001 0100 Model-ID # ( D-50 )

e 0001 0001 Command-ID # ( DT1 )

f 0aaa aaaa Address MSB

g 0bbb bbbb Address LSB

h 0ccc cccc Address LSB

i 0ddd dddd Data

j 0eee eeee Checksum

k 1111 0111 End of System Exclusive

Notes :

\*3-1 PG-1000 transmits this command only when the Parameter Request button is pushed. The following values of Address and Size are transmitted.

 Address : [ 00-00-00 ]  
 Size : [ 00-03-25 ] ( 42bytes )

**PPOGRAMMER FOR D-50**  
**MODEL PG-1000**
**MIDI Implementation**
 Date : Feb. 6. 1987  
 Version : 1.00

 35 TVA Level 0 - 100 ( 0 - 100 )  
 36 TVA Velocity Range 0 - 127 ( -50 - +50 )  
 37 TVA Bias Point/Direction 0 - 127 ( <A1 - <C7, >A1 - >C7 )  
 38 TVA Bass Level 0 - 12 ( -12 - 0 )

 39 TVA ENV Time 1 0 - 100 ( 0 - 100 )  
 40 TVA ENV Time 2 0 - 100 ( 0 - 100 )  
 41 TVA ENV Time 3 0 - 100 ( 0 - 100 )  
 42 TVA ENV Time 4 0 - 100 ( 0 - 100 )

 43 TVA ENV Time 5 0 - 100 ( 0 - 100 )  
 44 TVA ENV Level 1 0 - 100 ( 0 - 100 )  
 45 TVA ENV Level 2 0 - 100 ( 0 - 100 )

 46 TVA ENV Level 3 0 - 100 ( 0 - 100 )  
 47 TVA ENV End Level 0 - 100 ( 0 - 100 )

 48 TVA ENV T1 Velo Follow 0 - 4 ( 0 - 4 )  
 49 TVA ENV Time Keyfollow 0 - 4 ( 0 - 4 )

 50 TVA ENV Time Keyfollow 0 - 4 ( 0 - 4 )  
 51 TVA Mod LFO Select 0 - 5 ( +1, -1, +2, -2, +3, -3 )  
 52 TVA Mod LFO Depth 0 - 100 ( 0 - 100 )

53 TVA Mod Aftertouch Range 0 - 14 ( -7 - +7 )

 4.4 Common parameters  
 ( Parameter address = Base address + Offset )

 4.5 Patch Factors  
 ( Parameter address - Base address + Offset )

 4.5 Patch Factors  
 ( Parameter address - Base address + Offset )  
 Offset Function Value

 20 Portamento Mode 0 - 2 ( U, L, UL )  
 21 Hold Mode 0 - 2 ( U, L, UL )

 22 Upper Tone Key Shift 0 - 48 ( -24 - +24 )  
 23 Lower Tone Key Shift 0 - 48 ( -24 - +24 )

 24 Upper Tone Fine Tune 0 - 100 ( -50 - +50 )  
 25 Lower Tone Fine Tune 0 - 100 ( -50 - +50 )

 26 Bender Range 0 - 12 ( 0 - 12 )  
 27 After Bend Range 0 - 24 ( -12 - +12 )

 28 Portamento Time 0 - 100 ( 0 - 100 )  
 29 Output Mode 0 - 31 ( 1 - 32 )

 30 Reverb Type 0 - 100 ( 0 - 100 )  
 31 Reverb Balance 0 - 100 ( 0 - 100 )

 32 Total Volume 0 - 100 ( 0 - 100 )  
 33 Tone Balance 0 - 100 ( 0 - 100 )

 34 Chase Mode 0 - 2 ( U, L, UL, UL )  
 35 Chase Level 0 - 100 ( 0 - 100 )

36 Chase Time 0 - 100 ( 0 - 100 )

Offset Function Value

 0 - 6 ( 1 - 7 )  
 0 - 2 ( 0 - 2 )  
 0 - 4 ( 0 - 4 )  
 0 - 50 ( 0 - 50 )  
 0 - 50 ( 0 - 50 )

 10 Structure No. 0 - 6 ( 1 - 7 )  
 11 P-ENV Velocity Range 0 - 2 ( 0 - 2 )  
 12 P-ENV Time Keyfollow 0 - 4 ( 0 - 4 )  
 13 P-ENV Time 1 0 - 50 ( 0 - 50 )  
 14 P-ENV Time 2 0 - 50 ( 0 - 50 )

 15 P-ENV Time 3 0 - 50 ( 0 - 50 )  
 16 P-ENV Time 0 0 - 100 ( -50 - +50 )  
 17 P-ENV Level 1 0 - 100 ( -50 - +50 )

 18 P-ENV Level 2 0 - 100 ( -50 - +50 )  
 19 P-ENV Sustain Level 0 - 100 ( -50 - +50 )  
 20 P-ENV End Level 0 - 100 ( -50 - +50 )

 21 P-ENV Mod LFO Depth 0 - 100 ( 0 - 100 )  
 22 Pitch Mod Lever 0 - 100 ( 0 - 100 )  
 23 Pitch Mod Aftertouch 0 - 100 ( 0 - 100 )

 24 Pitch Mod Waveform 0 - 3 ( TRI, SAW, SQU, RND )  
 25 LFO-1 Rate 0 - 100 ( 0 - 100 )  
 26 LFO-1 Delay Time 0 - 100 ( 0 - 100 )

 27 LFO-1 Sync 0 - 2 ( OFF, ON, KEY )  
 28 LFO-2 Waveform 0 - 3 ( TRI, SAW, SQU, RND )  
 29 LFO-2 Rate 0 - 100 ( 0 - 100 )

 30 LFO-2 Delay Time 0 - 100 ( 0 - 100 )  
 31 LFO-2 Sync 0 - 1 ( OFF, ON )  
 32 LFO-3 Waveform 0 - 3 ( TRI, SAW, SQU, RND )  
 33 LFO-3 Rate 0 - 100 ( 0 - 100 )  
 34 LFO-3 Delay Time 0 - 100 ( 0 - 100 )

 35 LFO-3 Sync 0 - 1 ( OFF, ON )  
 36 LFO-3 Frequency 0 - 15 ( 63, 75, 88, 105, 125, 150, 175, 210, 250, 300, 350, 420, 500, 600, 700, 840 )

 38 Low EQ Gain 0 - 24 ( -12 - +12 )  
 39 High EQ Frequency 0 - 21 ( 250, 300, 350, 420, 500, 600, 700, 840, 1, 1.2, 1.4, 1.7, 2.0, 2.4, 2.8, 3.4, 4.0, 4.5, 5.7, 6.7, 8.0, 9.5 )

40 High EQ Q 0 - 8 ( 0.3, 0.5, 0.7, 1.0, 1.4, 2.0, 3.0, 4.2, 6.0 )

 41 High EQ Gain 0 - 24 ( -12 - +12 )  
 42 Chorus Type 0 - 7 ( 1 - 8 )

 43 Chorus Rate 0 - 100 ( 0 - 100 )  
 44 Chorus Depth 0 - 100 ( 0 - 100 )

45 Chorus Balance 0 - 100 ( 0 - 100 )

46 Partial Mute 0 - 3

Value

Partial 1

Partial 2

0 Muting

Sounding

1 Sounding

Muting

2 Muting

Sounding

3 Sounding

Sounding

47 Partial Balance 0 - 100 ( 0 - 100 )